



Glacier Point Star Party

Good news! SVAS got June 19-20 for the 2009 Yosemite Glacier Point Star Party. This should be a great time with very little moon. Mark your calendar if you are interested in attending this year. I'll put out more information soon, but this is a really great opportunity. We put on a star party for Yosemite guests on Friday and Saturday night in an awesomely beautiful and dark site at Glacier Point. In return, we get free entry and reserved camping in Yosemite.

Doug Williams



Photo by Julie Noland.

Laying a Cornerstone

As we are all aware by now, this year has been designated the International Year of Astronomy 2009 (IYA2009) by the United Nations and the International Astronomical Union. The intent of the yearlong celebration is to bring the joy and adventure of astronomy to as many of our global species as possible.

Setting the stage for the worldwide astronomy project is the IYA2009 Cornerstone program, eleven monthly focus areas for astronomical organizations, colleges, and local clubs to use in preparing & presenting public outreach events. The Cornerstone project for April is *100 Hours of Astronomy*, a four-day event designed to bring astronomy directly to the public around the world. From April 2nd through April 5th, groups will be participating in

bringing astronomy to the people in a variety of unique ways, with participating organizations encouraged to make plans that fit their own resources and enthusiasm. From major academic presentations to local clubs setting up scopes on busy street corners, the goal is to reach and record as many people as possible in that 100 (actually only 96)-hour period in April.

At the January general meeting, Liam McDaid made a brief announcement that SVAS will be participating in the *100 Hours of Astronomy* cornerstone program. But exactly how does the project work? Do members have to commit to staffing a club location for the entire 96 hours? Is there a set amount of time each member must volunteer for? Won't it get pretty cold, dark, and lonely for the unfortunate SVAS volunteer who is stuck with the 2:00 am to dawn shift? How about restroom facilities? Fear not, o hearty souls of the night, for I bring you the answers.

CORNERSTONE, page 5

Comet Lulin – Another Kohoutek?

In 2007, an astronomer first photographed what would be called Comet Lulin at Lulin Observatory (appropriately enough). It was however a 19 year old student who realized that the photographed object was in fact a comet. According to Brian Marsden, the comet reached its closest point to the Sun (perihelion) on January 10 of this year. It reached its maximum brightness of magnitude 5.2 on February 24, 2009. It will still be visible for a few weeks yet with binoculars or a small telescope. As I write this on February 26, the comet is within four degrees of the brightest star in Leo – Regulus (named by Copernicus, incidentally).

COMET, page 5

President's Perspective

Here we are at the end of another year of SVAS Astronomy. Many exciting events are planned for this International Year of Astronomy in 2009. Liam McDaid has assumed the responsibility of Chair for IYA 2009. Be sure to contact him directly to join in the festivities going on everywhere. Liam will be organizing several events throughout the year and every one of you can be a part of the action. I believe this could be the year that Astronomy climbs above all the bad things we hear daily in the news.

Keep your eyes peeled for another event when we schedule the "100 Hours of Astronomy" where we will be like astronomical raiding parties. The idea is to pop in here and there to do Astronomy in as many places as possible with the 100 hours. There are many events planned across Sacramento County. Ask around on the Yahoo Group by posting a question about you neighborhood. Find out the "who", "what" and "when" for your area. Join us or organize your own event and let us know where. Once the word gets out about all these astronomical raiding parties, the general public will be begging to find out where they are. There is even talk that it could carry outside the Sacramento County area (See Forrest for information).

The Kepler Mission will be providing addition cosmic conversation after the launch scheduled for March 5th. The planetary discovery that will be possible over the next several years will inspire

thousands of potential amateur astronomers around the world. It will be our time to teach everyone what we know. We can showcase our talents with the telescopes we have and expose them to the "Wonders of the Universe" that is at our fingertips.

On February 21st and 22nd, the Challenger Leaning Center launched the IYA 2009 celebration with a great event. They unveiled two new lithographs from NASA that were added to their displays. The weekend event was well attended in spite of the cloudy Saturday and rainy Sunday we all experienced. Saturday's solar viewing was attended by almost 200 visitors outside the Center in the back. Without "cloud filters", we were all at the mercy of "mother nature". We knew there was a sun out there but without those filters, we could only talk about it. Even with that, Forrest kept meticulous records of the folks who came by the Sun Spotter, H-Alpha and White Light filtered telescopes set-up near the back door. Since the rains rolled in on Sunday, telescope activities was restricted to indoor displays. I set up an 8" Celestron SCT and fielded many questions about telescopes and Astronomy. I think I counted well over 200 visitors on Sunday.

Consider all the possibilities we have in this pending year to reach someone new who has never looked through a telescope. Give them the treat of their burdened life and help them to put all the terrible news they hear into a better perspective. Once they see what is really happening in the cosmos, they will realize what it is all about. Lend a hand with one of these events.

Walt Heiges

March Elections

SVAS' annual elections will be held during the general meeting on March 20, 2009. The ballot presently includes the following candidates:

President – Walt Heiges, Liam McDaid
Vice President – Ross Gorman
Secretary – Forrest Lockhart
Treasurer – Kirk Alexander
Directors at Large – Andrew Gallagher, Bob Lea, Margaret Minnick

Directors at Large are elected for 2-year terms, half of them up for re-election every year, five positions each year. Presently, there are only three candidates for director positions, so there are two positions still open for additional candidates, although any number may run. Additional candidates can be added to the ballot for any of the officer's positions, as well.

Nominations closed at midnight, March 1st, so that the final ballot can be prepared prior to the election. However, nominations can be reopened on the floor on election night by a majority vote of the membership.

Any SVAS member who joined prior to February, 2009, is eligible to vote and run for office. Ballots are limited to one per membership. If both spouses pay dues for individual memberships, then each is entitled to a ballot.

The Bylaws and Special Rules of Order (concerning elections) may be found on the SVAS website: Login, Members, File Downloads.

Tom Silver
SVAS Director at Large

An Old Friend

Over the many decades that I have spent under the stars, I must admit to being rather fickle regarding my observing focus. As a teenager armed with a very small 60mm, 30x refractor in urban Los Angeles, I was limited to observing the Moon and the brighter planets. My volunteer docent chores at Griffith Observatory allowed me occasional time to search out deep sky objects with the 12" refractor, but the city lights kept a tight leash on even a scope of that size. So I spent many evenings in the backyard observing and

marveling at the varied lunar terrain, all the while longing for the day that I could get a larger scope and get out under the dark desert sky.

Once I moved up in aperture and out of the city, I quickly became hooked on all the wonders of the deep sky. No more moon, planets, and the brighter clusters for me. In fact, I began to regard them with some disdain for I was now a hunter of faint emission nebulae, globs, and distant galaxies. Life was a wonderful cornucopia of endless faint fuzzies that commanded my attention and imagination for many years.

It was a monthly column in Sky & Telescope by planetary geologist, Charles Wood that began to draw my attention back to my old friend, the Moon. His column, Exploring The Moon, is a well-written treatise on specific features found on our nearest neighbor. Reading Wood's monthly article was like taking a lunar hike with a knowledgeable tour guide. Soon I found myself digging around on my bookcase for those old lunar maps and now-ragged notes I had made with my mini-scope over a half-century past. I soon realized that, while the Moon has not changed in 50 years,

OLD FRIEND, page 5

2009 is the International Year of Astronomy

It was exactly four hundred years ago that Galileo Galilei looked through a telescope at the sky for the first time (so far as we know). As a result, 2009 has been declared the International Year of Astronomy, with events going on worldwide to commemorate it. Europe in particular has been pulling out the stops (and taxpayer money) to support a continent-wide public outreach. Here in the US, even without government largesse, many activities are planned toward the goal of having as many humans look through a telescope this year as possible.

It may seem almost perverse that very little in the way of rare or special events in the sky will happen – for example there are no rare conjunctions, eclipses, or lunar occultations. But we need to remember that for folks who have never looked through a telescope before, Saturn (or even just the Moon) will knock their socks off. The goal is to get everyone looking up, by hook or by crook.

The SVAS has several events planned toward this goal and you will hear more about them over the coming year. One thing we are planning is doing more sidewalk astronomy in popular urban locations (coffee shops, malls, etc.) Liam McDaid is the IYA2009 coordinator for the SVAS and if you can volunteer, you can contact him at (916) 558-2005 or mcdaidl@scc.losrios.edu. Remember that you can help even if you are new, or have no telescope. Volunteers are the heart of our organization and we need your help. Be a telescope ambassador today!

Websites of interest:

The main webpage:
<http://www.iya2009.org/>

The main US webpage:
<http://astronomy2009.us/>

IYA page-Astronomical Society of the Pacific:
<http://www.astrosociety.org/iya/index.html>

IYA page-Sacramento City College
(shameless plug):
<http://scc.losrios.edu/~sah/physics/IYA2009.htm>

Liam McDaid

Penumbral Lunar Eclipse

On Monday morning, Feb. 9th, I observed the scheduled penumbral lunar eclipse from my place in the Fruitridge area of South Sacramento. A break between rainstorms provided mostly clear skies for this dawn event. When I first looked, some minutes after 5:00am PST, slight darkening was already visible on the upper portion of the Moon, as it was passing through the southern rim of Earth's penumbra and moving closer to the umbral edge. I observed with my 3" refractor at 111x and at 25x. I also observed through its 10x finderscope, as well as with my 10x50 binoculars. I took many pictures with both my digital camera and a one-time-use camera. At 111x, the normal shadows of crater ridges near the Moon's northern limb were still visible, but with reduced contrast. Some thin to medium thickness clouds slid across the Moon around mid-eclipse (max. penumbral mag, 92% around 6:38am PST), but the orange-hued Moon, with a decided shading on its upper right limb, was seen again and photographed--a few minutes before 7am--in a clear space shortly before Moonset in the brightening sky. I had the morning TV news on, but I heard no comments about the event.

Now, at SkyandTelescope.com, you can see a photo of how it looked from a Japanese satellite orbiting 60 miles above the Moon! Click on "Earth-and-Sun Diamond Ring." Read the description, and then look down at the blogs below, and you'll find an explanation for the lack of red color in the Earth's atmospheric appearance for this eclipse.

In December of 2007, SVAS member Margo Schuler and I e-mailed a joint letter to S&T, asking for more research into the possible views of the Earth FROM the Moon during lunar eclipses, but no response was ever received. Perhaps this new satellite photo--that the magazine posted--will open up much new interest in this topic. (I last wrote about this topic in a summer 2007 issue of the SVAS newsletter.

Ralph Merletti
ralph_merletti@yahoo.com

March Speaker

The speaker for the SVAS General Meeting in March will be Forrest Lockhart.

While the election ballots are being counted, Forrest will speak on *Shedding Light on the Sun*, a review of the life and times of our G-type star and how amateurs can safely observe solar phenomena.

Elizabeth Champ SVAS Charter Member

Chris Hulbe sent a copy of the January / February 2009 SVAS newsletter to Elizabeth Champ and received the following reply from George Haine, a former son-in-law:

Thanks for thinking of Betty (Elizabeth) by sending the copy.

Regretfully need to inform you and the group that Betty passed away in July. She was 94.

She cherished the fact that she was a 'charter' member and was involved for so many years. When she went to work at Mather A.F.B. and had a chance to develop the small planetarium they had there and all her friends and associates involved, the trips with the group, it was of great memories.

Elizabeth was the Society's first newsletter editor as well as an early officer. She maintained her SVAS membership after she moved to southern California, came north for our 50th anniversary banquet, and for many years sent articles of astronomical interest to us for the newsletter.

SVAS Website
Our current website address
is www.svas.org

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Professor Scopé

There are three important factors when purchasing real estate. When you choose that new home or business site, you consider those three things – LOCATION! LOCATION! LOCATION! Well, when considering that new telescope purchase, you must also consider three very important factors that make that telescope all it can be – EYEPIECE! EYEPIECE! EYEPIECE!

Actually, the first telescopes didn't have an eyepiece. Galileo had simply two lenses held at a specific distance to bring his objects into focus. You might also think about those mighty pirates cruising the world's seas. The Captain of one of those ships flying the skull and crossbones flag would scan the horizon looking for the enemy ships of the Queen. Generally made of brass, they were nothing more than two lenses at specific distances from each other.

In the next few editions of the SVAS Observer, I will be covering many of the most common types of eyepieces. I sat down with one of my colleagues to discuss the many kinds available to professional and amateur astronomers. We agreed on this list below:

- | | |
|---------------|-------------|
| 1.) Huygenian | 5.) Ortho |
| 2.) Ramsden | 6.) Plössel |
| 3.) Kellner | 7.) König |
| 4.) Erfle | 8.) Nagler |

Let's begin with the Huygenian eyepiece. This two-element design from the 17th century is commonly supplied with poor-quality telescopes. This basic eyepiece consisting of two simple plano-convex elements and is commonly used on small refractors. The eye relief is good, the angular field of view is large and the eyepiece is relatively free from chromatic aberration. The two-element Huygenian eyepiece was invented by Christiaan Huygens (pronounced "HOY-[glens]") in the 1600s. The design is inferior to more recent designs, so it is now obsolete, except that some Huygenian ("H") eyepieces are still supplied with cheap, imported telescopes. Eye relief is extremely short and the apparent field is small. The 18th-century Ramsden design is much better and I will be covering it next, but it is still not up to today's standards (though it is used on some microscopes that have very high f-ratios).

Want to purchase a 2" eyepiece for

your pride and joy? This is an exceptionally inexpensive way to get into the world of 2" wide field eyepieces. The 50mm modified Huygenian eyepiece is a simple two-lens design. While it is multicoated and reasonably well corrected for distortion and coma, it works best with long focal ratio telescopes. Best performance comes with scopes f/12 and longer, although it will usually give acceptable performance at f/10. If used with an f/10 or faster focal ratio telescope, there will be some field curvature and chromatic aberration visible in the outer third of the field. Considering that the next least expensive 2" eyepiece close to this focal length costs four times as much, many people are willing to overlook its optical flaws and happily use this bargain eyepiece with their f/8 or f/10 scopes.

"Junk" eyepieces (maybe not the nicest of terms) are just that: junk. Eyepiece designs falling into this category include the Huygenian and the Ramsden. While these eyepieces do deserve some credit for leading the way to today's more improved oculars, both are significantly inferior to other designs. These eyepieces often suffer from internal reflections, narrow fields of view, poor sharpness, and low contrast. The most typical place the Huygenian and Ramsden eyepiece design is found is with low quality "department store" telescopes. Most manufacturers do not offer these designs and for good reason. **Pros:** none other than extreme low cost. **Cons:** extremely poor image quality when compared to any of the other designs.

In a Dogpile search, information was found that Huygenian eyepieces seem to be more suited to microscopes than to telescopes. Numerous sites on microscopy seem to think benignly if not highly of this style eyepiece. I apologize to all of you who have this eyepiece but it is what it is.

Professor Scopé

Mysterious Epsilon Aurigae

Stars often come in sets and are called binaries. It may make no sense that star systems with three or more stars being called "binary", but it would get confusing if we referred to trinarities, quadrinaries, quintinaries, etc. for each star system. Occasionally from random chance, a binary system will lineup so that we see the stars eclipse each other. Algol in Perseus is one of the more famous of these types of stars as is Sheliak in Lyra. Of all eclipsing binaries, however, none is more mysterious than Epsilon Aurigae (ϵ Aur).

ϵ Aur is a binary system that eclipses every twenty seven years (27.1 yrs) and then stays eclipsed for **two years!** This is odd, to say the least. So whatever is causing these eclipses must be very large. The object we can see in the system is an F0 supergiant star. The eclipsing object is not so visible. In fact, the eclipsing object can't be seen with the naked eye.

Even stranger is the fact that in the middle of the eclipse, the star(s?) brighten slightly. If ϵ Aur is being eclipsed by something big and faint, it may be an object that has a thick disk around it. A recent idea has been proposed that at the center of this eclipsing disk may be a B5 star. At this point, we just don't know enough to state clearly what is eclipsing ϵ Aur. That's ok, because science has and always must have unknowns. For more information about this binary system, see: <http://www.hposoft.com/Campaign09.html>

This August will be the beginning of the latest eclipse. Astronomers, astrophiles, and many others are already planning campaigns of photometry and spectroscopy on ϵ Aur. Although the eclipse hasn't started yet, ϵ Aur is easy to find as it is the brightest star of "The Kids" in Auriga, and in the pentagon that makes up Auriga, it's the star right next to Capella. By August, Auriga will be near the Sun in the morning sky and by the time it's easily visible again in October, the eclipse will be well underway. So the next time you're out looking up, take a look at this intriguing mysterious star.

Liam McDaid



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Cornerstone

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Here is a summation of the major issues. No group is committed to staffing any venue for the entire 100-hour interval. Each club will set and register times and location with the worldwide organization. The venues and times will be published on the IYA2009 website for the public to see and plan to visit. Members are free to volunteer for as long as they are available to do so. The likelihood of SVAS staffing an around the clock program is right up there with being hit by an asteroid. The times, locations, shift durations, and even specifically what we plan to do will be decided by Liam and the volunteer team. At bare minimum, all we need is a scope, a couple of volunteers to staff it, a piece of parking lot at the local Starbucks, and we would be in business. I do hope, however, that the members of SVAS, especially members who don't normally take part in star parties, will contact Liam and volunteer for several venues for what might be the most star fun we have all year. I can't wait.

By the way, the newly formed 8 member Sierra StarGazers public outreach group up in the foothills has already registered as a participant and is planning to place scopes on busy street corners all over El Dorado County during the magic 100 hour period. If they can do it.....?

For more info on this worthy project, just check the website: www.astronomy2009.org/globalprojects/cornerstones/

And don't forget to call or E-mail Liam ASAP to volunteer. You will meet some great folks and have a wonderful time.

Forrest Lockhart

Comet

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Lulin is not an especially bright comet, being barely visible to the naked eye and even then only in dark skies. It does have a few interesting features. Firstly, it's very green. Secondly, it has lost its tail due to a disturbance in the solar wind hitting the tail.

For those of you who can remember back to the 1970s, there was a comet that promised to be spectacular – Comet Kohoutek. Brightness predictions for comets are always dangerous for those making them and it turned out that the estimates for Kohoutek (made when Kohoutek was still beyond the orbit of Jupiter) turned out to be very, very, wrong. Lulin, on the other hand tracked pretty close to the range of estimates for its brightness which was between sixth and fourth magnitude.

When we encounter a new comet, and it doesn't do anything exciting (from our point of view), we often wish something would happen. That wish was granted in late 2007, with the eruption that emerged from Comet Holmes that increased its brightness from 17th magnitude to 3rd magnitude in less than two days. Holmes then stayed quite naked eye visible for at least a month after that. Alas, these events are rare. Comet Holmes was discovered the first time in 1892 because of a similar abrupt brightening. This makes Holmes a comet that has erupted twice in the last 115 years.

If you have a dark sky, get out to look at Lulin while it's still in our neighborhood. All you need are some binoculars.

Liam McDaid

Old Friend

CONTINUED FROM PAGE 2

lunar cartography and our understanding of lunar evolution has improved greatly. My conclusion, to my wife's chagrin, was that I needed more stuff!

My first purchase was Sky & Telescope's *Field Map of the Moon*, a four square-foot, folding lunar map illustrated by Antonin Rukl. This waterproof map comes in standard and mirror image versions suitable for any telescope. Soon I wanted more detailed views of interesting features so I purchased Rukl's book, *Atlas of the Moon*, a comprehensive, exquisitely detailed set of lunar drawings that provide a lifetime of telescopic lunar touring. My last purchase was Wood's *The Modern Moon, A Personal View*, which provides many insights into the history of lunar cartography and the geology behind interesting lunar features.

It was when I began assembling a list of specialized planetary eyepieces that my wife exhibited what I found to be an amazing degree of hostility. She stated with some force and volume that if my pricey collection of Mr. Nagler's eyepieces were not sufficient for lunar observing, I had better move along into another hobby (or residence), for no new eyepieces were to cross our threshold.

So I must be content with what I have. So be it. Why don't you join me in discovering, or in my case, re-discovering our old friend, the Moon. I may even pull out my old little scope again ... or not.

Forrest Lockhart

SVAS Calendar of Events

March

- 20 — **SVAS Board Meeting** (7 pm) CSUS Mendocino Hall (held just prior to the general meeting).
General Meeting (8 pm) CSUS Mendocino Hall, Room 1003. Speaker Forrest Lockhart, *Shedding Light on the Sun*.
- 28 — **Member Star Party**

April

- 17 — **SVAS Board Meeting** (7 pm) CSUS Mendocino Hall (held just prior to the general meeting).
General Meeting (8 pm) CSUS Mendocino Hall, Room 1003. Speaker TBA.
- 25 — **Member Star Party**

May

- 15 — **SVAS Board Meeting** (7 pm) CSUS Mendocino Hall (held just prior to the general meeting).
General Meeting (8 pm) CSUS Mendocino Hall, Room 1003. Speaker TBA.
- 23 — **Member Star Party**

WHOM TO CALL

For more information: www.svas.org • (916) SVAS-111

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Vacant

Observatory Director

Davin Enigl (916-989-8264)

WHERE TO MEET

General meetings are held on the third Friday of each month.
Please see calendar for details.

Subscribe to the SVAS email list by going to the Yahoo group at <http://groups.yahoo.com/group/svas-members> and sending a request to join the group.

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Articles—Manuscripts and letters are welcome via email in Word or text format. Items may be e-mailed to [Chris Hulbe](mailto:Chris.Hulbe@comcast.net) at chulbe@comcast.net. **Deadline for the following month's newsletter is the Wednesday following the SVAS General Meeting.**

Advertising—Commercial non-personal advertising, business card through full page, is available. Contact Chris Hulbe at 967-3794 for information.

Classified advertising is free to members of SVAS. Submit ads to Chris Hulbe at 967-3794, chulbe@comcast.net.

Membership Renewal/ New Member Application

Yes! Please renew my membership, or make me a new member of the Sacramento Valley Astronomical Society.

1-year Renewal 1-year New Membership

General, \$35 — Enjoy monthly meetings, informative bi-monthly newsletters, and awe inspiring views of the universe at monthly star parties.

Student, \$20

Supporting, \$75

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Observatory, an additional \$40 — Enjoy all the benefits of a general membership plus use of the Henry Grieb Observatory (HGO). You must be a general member for 6 months or longer, and must be approved by the Board of Directors.

Additional Tax Deductible Donation: \$ _____

Tell us about yourself...

Name(s) _____

Address _____

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Telephone (_____) _____

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Please tell us where you obtained this form:

- A star party at
- A daytime event at
- From a member.
- Yes, I would like to be contacted about volunteering.
- Yes, I would like to have my contact information listed on the SVAS Members Only Web Page.
- No, I do not want the SVAS to contact me via email.
- I wish to read the SVAS Newsletter on the web, and I opt out of receiving the printed newsletter.

I agree to abide by the terms and conditions* governing the use of the SVAS Special Use Permit Property and the SVAS constitution and bylaws. I understand that failure to abide can result in revocation of use privileges and SVAS membership.

Signed _____ Date _____

*A copy of the SVAS Rules of Operation and Regulations will be provided upon request to all new members. The rules are also available at www.svas.org



Enclose payment and mail to:
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